

RESPONSE TO OFFICE ACTION**Serial No. 10/805,890****Page 6 of 9****REMARKS**

This response is intended as a full and complete response to the Office Action dated November 23, 2005. In view of the amendments and the following discussion, the Applicants believe that all claims are in allowable form.

Applicants have amended paragraph [0006] in the specification to correct typographical errors. Applicants submit that the changes made herein do not introduce new matter.

DOUBLE PATENTING

Claims 1-15, 17, and 21-22 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-17 of U.S. Patent No. 6,806,095. To expedite examination, Applicants submit a Terminal Disclaimer under 37 CFR 1.321(c) disclaiming the terminal portion of any patent that should issue from the present application so that such a patent would expire no later than the expiration date of U.S. Patent No. 6,806,095.

Claims 1-15, 17, and 21-22 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-7 and 9-20 of copending Application No. 10/143,397.

The Applicants provisionally agree to file a terminal disclaimer to resolve the present double patenting rejection if and when one of the applications is finally allowed. In accordance with MPEP §804(I)(B), "if the 'provisional' double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the 'provisional' double patenting rejection in the other application(s) into a double patenting rejection at the time one application issues as a patent." As such, Applicants will file a terminal disclaimer in the future, if necessary.

Claims 1-8, 10, 12-13, 15, 17-18, and 21-22 stand provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-8 of copending Application No. 10/194,566.

427441

RESPONSE TO OFFICE ACTION

Serial No. 10/805,890

Page 7 of 9

The Applicants provisionally agree to file a terminal disclaimer to resolve the present double patenting rejection if and when one of the applications is finally allowed. In accordance with MPEP §804(I)(B), "if the 'provisional' double patenting rejection in one application is the only rejection remaining in that application, the examiner should then withdraw that rejection and permit the application to issue as a patent, thereby converting the 'provisional' double patenting rejection in the other application(s) into a double patenting rejection at the time one application issues as a patent." As such, Applicants will file a terminal disclaimer in the future, if necessary.

CLAIM REJECTIONS**A. 35 U.S.C. §103 Claims 1-6 and 10**

Claims 1-6 and 10 stand rejected as being unpatentable over United States Patent Application Publication No. US 2001/0055852 A1, published Dec. 27, 2001, to *Moise et al.* (hereinafter referred to as "*Moise*"). In response, the Applicants have amended claim 1 to more clearly recite aspects of the invention.

Independent claim 1, as amended, recites limitations not taught, shown or suggested by *Moise*. *Moise* teaches to etch PZT, BST, or SBT (paragraph [0010]. More specifically, *Moise* teaches to etch PZT using Cl₂, O₂, CF₄, and Ar (paragraphs [0159] and [0167]), or etch PZT and SBT using Cl₂ and O₂ (paragraph [0173]). However, *Moise* does not teach, show or suggest a method of plasma etching, using carbon monoxide and a halogen gas, a layer of dielectric material comprising at least one of HfO₂, ZrO₂, ZrSiO₂, HfSiO₂, and TaO₂, as recited by amended claim 1.

Thus, the Applicants submit that independent claim 1 and claims 2-6 and 10 that depend therefrom are patentable over *Moise*. Accordingly, the Applicants respectfully request the rejection to claims -6 and 10 be withdrawn.

RESPONSE TO OFFICE ACTION
Serial No. 10/805,890
Page 8 of 9

B. 35 U.S.C. §103 Claims 7-9 and 11

Claims 7-9 and 11 stand rejected as being unpatentable over *Moise* in view of United States Patent No. 5,877,032, to *Guinn et al.* (hereinafter referred to as "*Guinn*"). In response, the Applicants have amended claim 1 to more clearly recite aspects of the invention.

Claim 1, on which claims 7-9 and 11 depend, has been amended as described above. Amended claim 1 is, as described above, distinguishable from *Moise*. The Examiner relies on *Guinn* as teaching that plasma process parameters such as pressure, source power, and bias power are result effective variables which are commonly determined by routine experiment. *Guinn* does not teach, show or suggest a method of plasma etching, using carbon monoxide and a halogen gas, a layer of dielectric material comprising at least one of HfO_2 , ZrO_2 , ZrSiO_2 , HfSiO_2 , and TaO_2 , as recited by amended claim 1.

Thus, the Applicants submit that dependent claim 1 and claims 7-9 and 11 that depend therefrom are patentable over the combination of *Moise* and *Guinn*. Accordingly, the Applicants respectfully request the rejection to claims 7-9 and 11 be withdrawn.

C. 35 U.S.C. §103 Claims 12-18 and 21-22

Claims 12-18 and 21-22 stand rejected as being unpatentable over *Moise* in view of United States Patent No. 6,790,755, to *Jeon* (hereinafter referred to as "*Jeon*"). Applicants respectfully traverse the rejection.

The teachings of *Moise* have been described above. The Examiner acknowledges that *Moise* does not teach etching TaO_2 , at least one of ZrO_2 and ZrSiO_2 , and HfSiO_2 , as recited in claims 12, 17, and 21, respectively, but relies on *Jeon* as teaching using PZT, tantalum oxide, zirconium oxide, zirconium silicate or hafnium silicate as a high-k dielectric material. *Jeon* teaches methods for forming various semiconductor structures. These structures contain layered dielectric structures of alternating sub-layers of high-k dielectric materials and at least one layer of a standard-k dielectric material. *Jeon* teaches annealing these layers, but is silent as to etching the

RESPONSE TO OFFICE ACTION

Serial No. 10/805,890

Page 9 of 9

high-k dielectric layers. *Jeon* teaches a plethora of high-k dielectric materials suitable for annealing. Among the list of high-k dielectric materials are PZT, tantalum oxide, zirconium oxide, zirconium silicate or hafnium silicate. Because *Jeon* teaches annealing and is silent as to etching, and *Moise* is silent as to etching TaO₂, ZrO₂, ZrSiO₂, and HfSiO₂, there is no motivation found in either *Jeon* or *Moise* that the high-k dielectric materials TaO₂, ZrO₂, ZrSiO₂, and HfSiO₂ will etch in the same manner as PZT and the other high-k dielectric materials of *Moise*.

Thus, the Applicants submit that dependent claims 12, 17, and 21 and claims 13-16, 18, and 22 that depend therefrom are patentable over the combination of *Moise* and *Jeon*. Accordingly, the Applicants respectfully request the rejection to claims 12-18 and 21-22 be withdrawn.

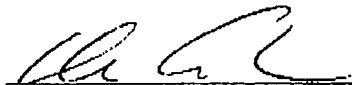
CONCLUSION

Thus, the Applicants submit that all claims now pending are in condition for allowance. Accordingly, both reconsideration of this application and its swift passage to issuance are earnestly solicited.

If, however, the Examiner believes that any unresolved issues still exist, it is requested that the Examiner telephone Mr. Keith Taboada at (732) 530-9404 so that appropriate arrangements can be made for resolving such issues as expeditiously as possible.

Respectfully submitted,

Feb 13, 2006


Keith P. TABOADA
Attorney Reg. No. 45,150
(732) 530-9404

Patterson & Sheridan, LLP
595 Shrewsbury Avenue
Suite 100
Shrewsbury, NJ 07702

427441